

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for inhibiting fungi on and in plant tissues, comprising:

applying a principal fungi-inhibitor and a metal, to seeds or tubers for a plant prior to planting, or to roots, foliage, flowers or fruit of a plant after planting, said principal fungi-inhibitor consisting of ~~at least one plant hormone, hormones~~ said at least one plant hormone including ~~a synthetic auxin selected from the group consisting of indole propionic acid, auxins,~~ said auxins including at least indole-3-acetic acid and indole-3-butyric acid, phenylacetic acid, naphthalene acetic acid (NAA), 2,4 dichlorophenoxy acetic acid, 4 chloroindole 3 acetic acid, 2,4,5 trichlorophenoxy acetic acid, 2 methyl 4 chlorophenoxy acetic acid, 2,3,6 trichlorobenzoic acid, 2,4,6 trichlorobenzoic acid, 4 amino 3,4,5 trichloropicolinic acid and mixtures thereof, said metal selected from the group consisting of alkaline earth metals, transition metals and mixtures thereof, ~~said auxin~~ auxins applied at a rate of about 0.0028 grams to about 2.8 grams of auxin per 100 kg of seed when applied to seeds or at a rate of about 0.0002 to about 0.06 grams of auxin per hectare per day when applied to roots, foliage, flowers or fruit, said rate being in an amount effective to inhibit fungi growth but wherein said amount is insufficient to negatively effect growth of said plant tissues.

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)
9. (Currently Amended) The method of Claim 1 wherein said ~~auxin~~ is auxins are applied to bean seeds at a rate of about 0.0028 to about 0.028 gm auxin/100 kg seed weight.
10. (Currently Amended) The method of Claim 9 wherein said ~~auxin~~ is auxins are applied at a rate of about 0.016 to about 0.112 gm auxin/100 kg seed weight.
11. (Currently Amended) The method of Claim 1 wherein said ~~auxin~~ is auxins are applied to potato seed pieces at a rate to result in about 0.0125 to about 2.8 gm auxin/hectare of planted pieces.
12. (Currently Amended) The method of Claim 11 wherein said ~~auxin~~ is auxins are applied at a rate to result in about 0.125 to about 0.28 gm auxin/hectare of planted pieces.
13. (Cancelled)
14. (Cancelled)
15. (Cancelled)
16. (Previously Presented) The method of Claim 1 wherein said metal is selected from the group consisting of calcium, zinc, copper, manganese and mixtures thereof.
17. (Previously Presented) The method of Claim 1 wherein said metal is present in a range of about 0.001 to about 5.0 percent-by-weight.
18. (Currently Amended) The method of Claim 1 wherein said principal fungi-inhibitor and said metal are applied by spraying said seeds or tubers with an aqueous solution of including said principal fungi-inhibitor and said metal or by immersing said seeds or tubers in an aqueous solution of including said principal fungi-inhibitor and said metal.
19. (Cancelled)

20. (Previously Presented) The method of Claim 1 wherein said fungi are selected from the group consisting of the *Fusarium*, *Rhizoctonia*, *Pythium* and *Phytophthora* families and mixtures thereof.

21. (Currently Amended) The method of Claim 1 wherein said ~~plants are~~ plant is a crop ~~plants~~ plant selected from the group consisting of dry beans, soybeans, onions, corn, cotton, potatoes and mixtures thereof.

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Currently Amended) A method for inhibiting fungi on and in plant tissues, comprising:

manipulating the level of auxin in said plant tissues by applying a principal fungi-inhibitor and a metal₂ to seeds or tubers for a plant prior to planting₂ or to roots, foliage, flowers or fruit of a plant after planting, said principal fungi-inhibitor being ~~at least one plant hormone,~~ hormones including auxins, said auxins including at least indole-3-acetic acid and indole-3-butyric acid, ~~said at least one plant hormone including a synthetic auxin,~~ said metal selected from the group consisting of calcium, zinc, copper, manganese and mixtures thereof, said ~~auxin~~ auxins applied at a rate of about 0.0028 grams to about 2.8 grams of auxin per 100 kg of seed when applied to seeds or at a rate of about 0.0002 to about 0.06 grams of auxin per hectare per day when applied to roots, foliage, flowers or fruit, said rate being in an amount effective to adjust the auxin in said plant tissues to a level sufficient to inhibit growth of said fungi but wherein said level is insufficient to negatively effect growth of said plant tissues.

26. (Currently Amended) The method of Claim 25 wherein said plant hormones further include a synthetic auxin is selected from the group consisting of indole propionic acid, ~~indole-3-butyric acid~~, phenylacetic acid, naphthalene acetic acid (NAA), 2,4-dichlorophenoxy acetic acid, 4-chloroindole-3-acetic acid, 2,4,5-trichlorophenoxy acetic acid, 2-methyl-4-chlorophenoxy acetic acid, 2,3,6-trichlorobenzoic acid, 2,4,6-trichlorobenzoic acid, 4-amino-3,4,5-trichloropicolinic acid and mixtures thereof.

27. (Cancelled)

28. (Currently Amended) A method for controlling the growth of *Fusarium* and *Rhizoctonia* organisms on dry bean plants, comprising:

applying a principal fungi-inhibitor and a metal to ~~seed beans~~ bean seeds for said plants prior to planting, said principal fungi-inhibitor consisting of ~~at least one plant hormone, hormones including auxins, said auxins including at least indole-3-acetic acid and indole-3-butyric acid, said at least one plant hormone including an auxin,~~ said metal selected from the group consisting of calcium, zinc, copper, manganese and mixtures thereof, said ~~auxin~~ auxins applied at a rate of about 0.0028 grams to about 0.028 grams of auxin per 100 kg of seed, said rate being in an amount effective to inhibit the growth of said organisms on and in tissues of said plants but wherein said amount is insufficient to negatively effect growth of tissues of said plants.

29. (Cancelled)

30. (Cancelled)

31. (Currently Amended) The method of Claim ~~30~~ 28 wherein said principal fungi-inhibitor and said metal are applied by spraying said seeds with an aqueous solution of said principal fungi-inhibitor and said metal.

32. (Cancelled)

33. (Currently Amended) A method for inhibiting an infestation of plants by insects and larvae of said insects, comprising:

applying an insect-inhibitor and a metal, to the seeds or tubers of said plants prior to planting, or to the roots, foliage, flowers or fruit of said plants after planting, said insect-inhibitor consisting of ~~at least one plant hormone~~; hormones including auxins, said auxins including at least indole-3-acetic acid and indole-3-butyric acid, said at least one plant hormone including an auxin; said metal selected from the group consisting of alkaline earth metals, transition metals and mixtures thereof, said ~~auxin~~ auxins applied at a rate of about 0.0028 grams to about 2.8 grams of auxin per 100 kg of seed when applied to seeds or at a rate of about 0.0002 to about 0.06 grams of auxin per hectare per day when applied to roots, foliage, flowers or fruit, said rate being in an amount effective to inhibit infestation by said insects and larvae but wherein said amount is insufficient to negatively effect growth of tissues of said plants.

34. (Cancelled)

35. (Cancelled)

36. (Cancelled)

37. (Cancelled)

38. (Currently Amended) The method of Claim ~~37~~ 33 wherein said plant hormones further include a synthetic auxin is selected from the group consisting of indole propionic acid, ~~indole 3-butyric acid~~, phenyl acetic acid, naphthalene acetic acid (NAA), 2,4-dichlorophenoxy acetic acid, 4-chloroindole-3-acetic acid, 2,4,5-trichlorophenoxy acetic acid, 2-methyl-4-chlorophenoxy acetic acid, 2,3,6-trichlorobenzoic acid, 2,4,6-trichlorobenzoic acid, 4-amino-3,4,5-trichloropicolinic acid and mixtures thereof.

39. (Cancelled)
40. (Cancelled)
41. (Cancelled)
42. (Currently Amended) The method of Claim 41 33 wherein said ~~auxin~~ auxins ~~is~~ are applied at a rate of about 0.002 to about 0.01 gm auxin/hectare/day.
43. (Currently Amended) The method of Claim 34 33 wherein said insect-inhibitor and said metal are applied to said roots, foliage, flowers or fruit as ~~a dry powder or as an aqueous solution.~~
44. (Cancelled)
45. (Previously Presented) The method of Claim 43 wherein said insect-inhibitor and said metal are applied as an aqueous solution by drip irrigation or by spray application.
46. (Cancelled)
47. (Currently Amended) The method of Claim 34 33 wherein said metal is selected from the group consisting of calcium, zinc, copper, manganese and mixtures thereof.
48. (Currently Amended) The method of Claim 34 33 wherein said insects are selected from the group consisting of sucking insects, chewing insects and mixtures thereof.
49. (Original) The method of Claim 48 wherein said sucking insects are selected from the group consisting of mites, aphids, thrips, white fly, leaf hoppers, flea hoppers, scaling insects and mixtures thereof and said chewing insects are selected from the group consisting of *Lepidoptera*, *Helidoceras* and mixtures thereof.
50. (Currently Amended) The method of Claim 34 33 wherein said plants are crop plants selected from the group consisting of dry beans, soybeans, onions, corn, cotton, potatoes and mixtures thereof.

51. (Currently Amended) A method for inhibiting an infestation of plants by pests, including insects and larvae of said insects, comprising:

manipulating the level of auxin in plant tissues of said plants by applying an insect-inhibitor and a metal, to seeds or tubers for said plants prior to planting, or to roots, foliage, flowers or fruit of said plants after planting, said insect-inhibitor being ~~at least one plant hormone~~, hormones including auxins, said auxins including at least indole-3-acetic acid and indole-3-butyric acid, ~~said at least one plant hormone including a synthetic auxin~~, said metal selected from the group consisting of alkaline earth metals, transition metals and mixtures thereof, said auxin auxins applied at a rate of about 0.0028 grams to about 2.8 grams of auxin per 100 kg of seed when applied to seeds or at a rate of about 0.0002 to about 0.06 grams of auxin per hectare per day when applied to roots, foliage, flowers or fruit, said rate being in an amount effective to adjust the auxin in said plant tissues to a level sufficient to inhibit infestation by said pests but wherein said level is insufficient to negatively effect growth of said plant tissues.

52. (Currently Amended) The method of Claim 51 wherein said plant hormones further include a synthetic auxin ~~is~~ selected from the group consisting of indole propionic acid, ~~indole-3-butyric acid~~, phenyl acetic acid, naphthalene acetic acid (NAA), 2,4-dichlorophenoxy acetic acid, 4-chloroindole-3-acetic acid, 2,4,5-trichlorophenoxy acetic acid, 2-methyl-4-chlorophenoxy acetic acid, 2,3,6-trichlorobenzoic acid, 2,4,6-trichlorobenzoic acid, 4-amino-3,4,5-trichloropicolinic acid and mixtures thereof.

53. (Cancelled)

54. (Currently Amended) A method for inhibiting an infestation of onion plants by thrips and larvae of said thrips, comprising:

applying a thrip-inhibitor and a metal to the foliage of said onion plants, said thrip-inhibitor consisting of ~~at least one plant hormone~~, hormones including auxins, said ~~at least one plant hormone including an auxin~~ auxins comprising at least indole-3-acetic acid and indole-3-butyric acid, said metal selected from the group consisting of alkaline earth metals, transition metals and mixtures thereof, said ~~auxin~~ auxins applied to said foliage at a rate of about 0.0002 to about 0.06 grams of auxin per hectare per day, said rate being in an amount effective to inhibit infestation by said thrips and larvae but wherein said amount is insufficient to negatively effect growth of tissues of said plants.

55. (Cancelled)

56. (Cancelled)

57. (Previously Presented) The method of Claim 54 wherein said thrip-inhibitor and said metal are applied as an aqueous solution by spray application to said foliage.

58. (Previously Presented) The method of Claim 57 wherein said metal is selected from the group consisting of calcium, zinc, copper, manganese and mixtures thereof.

59. (Cancelled)

60. (Currently Amended) A seed or seed piece for producing ~~plants~~ a plant having enhanced resistance to fungi, comprising:

a plant seed or seed piece; and

a plant ~~hormone~~ hormones including ~~an auxin~~ auxins, said auxins including at least indole-3-acetic acid and indole-3-butyric acid, together with a metal selected from the group consisting of alkaline earth metals, transition metals and mixtures thereof, said plant ~~hormone~~ hormones dispersed on the surface of said plant seed or seed piece as a principal fungi-inhibitor, said ~~auxin-present~~ auxins dispersed on said plant seed or seed piece at a rate of about 0.0028

grams to about 2.8 grams of auxin per 100 kg of seed, said rate being in an amount effective to inhibit fungi growth in or on tissues of said plant but wherein said amount is insufficient to negatively effect growth of said plant tissues.

61. (Cancelled)

62. (Cancelled)

63. (Currently Amended) The plant seed or seed piece of Claim 60 wherein said ~~auxin is~~ auxins are present in an amount of about 0.0028 to about 0.028 gm auxin/100 kg seed weight.

64. (Currently Amended) The plant seed or seed piece of Claim 60 wherein said plant seed is a bean seed and said ~~auxin is~~ auxins are present in an amount from about 0.0028 to about 0.028 gm auxin/100 kg seed weight.

65. (Currently Amended) The plant seed or seed piece of Claim 60 wherein said plant seed piece is a potato seed piece and said ~~auxin is~~ auxins are present in an amount which results in about 0.0125 to about 2.8 gm auxin/hectare of planted seed pieces.

66. (Currently Amended) The plant seed or seed piece of Claim 60 wherein said fungi are selected from the group consisting of the *Fusarium*, *Rhizoctonia*, *Pythium* and *Phytophthora* families and mixtures thereof.

67. (Currently Amended) The plant seed or seed piece of Claim 60 wherein said ~~plants are~~ plant is a crop ~~plants~~ plant selected from the group consisting of dry beans, soybeans, onions, corn, cotton, potatoes and mixtures thereof.

68. (Currently Amended) A bean seed ~~or seed piece~~ for producing ~~plants~~ a bean plant having enhanced resistance to fungi, comprising:

a bean plant seed; ~~or seed piece~~; and

a plant ~~hormone~~ hormones including ~~an auxin~~ auxins, said auxins including selected from the group consisting of at least indole-3-acetic acid and indole-3-butyric acid, indole-3-acetic acid and mixtures thereof, together with a metal selected from the group consisting of alkaline earth metals, transition metals and mixtures thereof, said plant ~~hormone~~ hormones dispersed on the surface of said bean plant seed ~~or seed piece~~ as a principal fungi-inhibitor, said ~~auxin present~~ auxins dispersed on said bean plant seed ~~or seed piece~~ at a rate of about 0.016 grams to about 0.112 grams of auxin per 100 kg of seed, said rate being in an amount effective to inhibit growth of said fungi but wherein said amount is insufficient to negatively effect growth of said bean plant.

69. (Currently Amended) The bean plant seed ~~or seed piece~~ of Claim 68 wherein said plant ~~hormone~~ hormones further ~~includes~~ include at least one of an ethylene, a cytokinin, a gibberellic acid, an abscisic acid, a brassinosteroid, a jasmonate, a salicylic acid and precursors and mixtures thereof dispersed on said surface of said bean plant seed, ~~or seed piece~~.

70. (Cancelled)

71. (Previously Presented) The method of claim 1 wherein said principal fungi-inhibitor and said metal are applied as an aqueous solution.

72. (Cancelled)

73. (Cancelled)

74. (Cancelled)

75. (Cancelled)

76. (New) The method of Claim 1 wherein said plant hormones further include a synthetic auxin selected from the group consisting of indole propionic acid, phenylacetic acid, naphthalene acetic acid (NAA), 2,4-dichlorophenoxy acetic acid, 4-chloroindole-3-acetic acid,

2,4,5-trichlorophenoxy acetic acid, 2-methyl-4-chlorophenoxy acetic acid, 2,3,6-trichlorobenzoic acid, 2,4,6-trichlorobenzoic acid, 4-amino-3,4,5-trichloropicolinic acid and mixtures thereof.

77. (New) The method of Claim 1 wherein said plant hormones further include another plant hormone selected from the group consisting of ethylene, cytokinin, gibberellin, abscisic acid, brassinosteroid, jasmonate, salicylic acid and mixtures thereof.

78. (New) The method of Claim 25 wherein said plant hormones further include another plant hormone selected from the group consisting of ethylene, cytokinin, gibberellin, abscisic acid, brassinosteroid, jasmonate, salicylic acid and mixtures thereof.

79. (New) The method of Claim 25 wherein said metal is present in a range of about 0.001 to about 5.0 percent-by-weight.

80. (New) The method of Claim 25 wherein said principal fungi-inhibitor and said metal are applied as an aqueous solution.

81. (New) The method of Claim 28 wherein said plant hormones further include a synthetic auxin selected from the group consisting of indole propionic acid, phenylacetic acid, naphthalene acetic acid (NAA), 2,4-dichlorophenoxy acetic acid, 4-chloroindole-3-acetic acid, 2,4,5-trichlorophenoxy acetic acid, 2-methyl-4-chlorophenoxy acetic acid, 2,3,6-trichlorobenzoic acid, 2,4,6-trichlorobenzoic acid, 4-amino-3,4,5-trichloropicolinic acid and mixtures thereof.

82. (New) The method of Claim 28 wherein said plant hormones further include another plant hormone selected from the group consisting of ethylene, cytokinin, gibberellin, abscisic acid, brassinosteroid, jasmonate, salicylic acid and mixtures thereof.

83. (New) The method of Claim 28 wherein said metal is present in a range of about 0.001 to about 5.0 percent-by-weight.

84. (New) The method of Claim 33 wherein said metal is present in a range of about 0.001 to about 5.0 percent-by-weight.

85. (New) The method of Claim 33 wherein said plant hormones further include another plant hormone selected from the group consisting of ethylene, cytokinin, gibberellin, abscisic acid, brassinosteroid, jasmonate, salicylic acid and mixtures thereof.

86. (New) The method of Claim 51 wherein said plant hormones further include another plant hormone selected from the group consisting of ethylene, cytokinin, gibberellin, abscisic acid, brassinosteroid, jasmonate, salicylic acid and mixtures thereof.

87. (New) The method of Claim 51 wherein said metal is selected from the group consisting of calcium, zinc, copper, manganese and mixtures thereof.

88. (New) The method of Claim 51 wherein said metal is present in a range of about 0.001 to about 5.0 percent-by-weight.

89. (New) The method of Claim 51 wherein said insect-inhibitor and said metal are applied as an aqueous solution.

90. (New) The method of Claim 54 wherein said plant hormones further include a synthetic auxin selected from the group consisting of indole propionic acid, phenylacetic acid, naphthalene acetic acid (NAA), 2,4-dichlorophenoxy acetic acid, 4-chloroindole-3-acetic acid, 2,4,5-trichlorophenoxy acetic acid, 2-methyl-4-chlorophenoxy acetic acid, 2,3,6-trichlorobenzoic acid, 2,4,6-trichlorobenzoic acid, 4-amino-3,4,5-trichloropicolinic acid and mixtures thereof.

91. (New) The method of Claim 54 wherein said plant hormones further include another plant hormone selected from the group consisting of ethylene, cytokinin, gibberellin, abscisic acid, brassinosteroid, jasmonate, salicylic acid and mixtures thereof.

92. (New) The method of Claim 54 wherein said metal is present in a range of about 0.001 to about 5.0 percent-by-weight.

93. (New) The method of Claim 60 wherein said metal is selected from the group consisting of calcium, zinc, copper, manganese and mixtures thereof.

94. (New) The method of Claim 60 wherein said metal is present in a range of about 0.001 to about 5.0 percent-by-weight.

95. (New) The method of Claim 65 wherein said auxins are present in an amount which results in about 0.125 to about 0.28 gm auxin/hectare of planted seed pieces.

96. (New) The method of Claim 68 wherein said plant hormones further include a synthetic auxin selected from the group consisting of indole propionic acid, phenylacetic acid, naphthalene acetic acid (NAA), 2,4-dichlorophenoxy acetic acid, 4-chloroindole-3-acetic acid, 2,4,5-trichlorophenoxy acetic acid, 2-methyl-4-chlorophenoxy acetic acid, 2,3,6-trichlorobenzoic acid, 2,4,6-trichlorobenzoic acid, 4-amino-3,4,5-trichloropicolinic acid and mixtures thereof.

97. (New) The method of Claim 1 wherein said auxins are applied at a rate of about 0.002 to about 0.01 gm auxin/hectare/day when applied to roots, foliage, flowers or fruit.

98. (New) The method of Claim 25 wherein said auxins are applied at a rate of about 0.002 to about 0.01 gm auxin/hectare/day when applied to roots, foliage, flowers or fruit.

99. (New) The method of Claim 51 wherein said auxins are applied at a rate of about 0.002 to about 0.01 gm auxin/hectare/day when applied to roots, foliage, flowers or fruit.

100. (New) The method of Claim 54 wherein said auxins are applied at a rate of about 0.002 to about 0.01 gm auxin/hectare/day.